



US 20190243111A1

(19) **United States**(12) **Patent Application Publication**
Ito(10) **Pub. No.: US 2019/0243111 A1**(43) **Pub. Date: Aug. 8, 2019**(54) **ZOOM LENS AND IMAGE PICKUP
APPARATUS INCLUDING THE SAME**(52) **U.S. Cl.**
CPC **G02B 15/20** (2013.01); **G03B 2205/0046**
(2013.01); **G03B 5/00** (2013.01)(71) Applicant: **CANON KABUSHIKI KAISHA,**
Tokyo (JP)(57) **ABSTRACT**(72) Inventor: **Daisuke Ito, Utsunomiya-shi (JP)**(21) Appl. No.: **16/267,934**(22) Filed: **Feb. 5, 2019**(30) **Foreign Application Priority Data**

Feb. 6, 2018 (JP) 2018-019219

Publication Classification(51) **Int. Cl.**
G02B 15/20 (2006.01)
G03B 5/00 (2006.01)

Provided is a zoom lens including a plurality of lens units in which intervals between adjacent lens units are changed during zooming. The plurality of lens units consist of, in order from object side to image side, a positive first lens unit, a negative second lens unit and a rear lens group including at least one lens unit. A minimum F-number of zoom lens during zooming from wide angle end to telephoto end, an interval, at wide angle end, between a lens surface on object side of a lens arranged closest to object side of rear lens group and a lens surface on image side of a lens arranged closest to image side of rear lens group, a total lens length of zoom lens at wide angle end, and the widest lens interval at wide angle end among lens intervals included in rear lens group are each appropriately set.

